

Controller's Quarterly

California Economic Challenges

Kathleen Connell, California State Controller

March 1997

Contents:

Controller's
Message 2

Economic
Outlook 3

California's
Education Gap 5

Community
College Industry
Partnership 8

Industry Focus:
Computer-Aided
Fashion Design 9

Clothing Company
on the
Cutting Edge 10

Garment 2000 11

California Regional
Profiles 12

Facts & Figures ... 15



Message From State Controller **Kathleen Connell**

I am pleased to report that California's economy is continuing on its positive course. For the state as a whole, the construction industry has posted significant increases in employment over the past year, reflecting a strengthening real estate market. The service industry has produced a large number of the state's new jobs, with business services accounting for a substantial share. The outlook for 1997 is for this good news to continue.

For California to maintain its economic prosperity, our education system must prepare for the challenges of the 21st Century. In this edition of the *Controller's Quarterly*, we examine recent trends that suggest there is an "**Education Gap**" in California. An increasing percentage of the state's college-bound students are leaving the state. At the same time, we have one of the nation's highest dropout rates. To ensure a secure economic future for our students as well as our state, it is imperative that we identify the causes of these trends and develop solutions.

The importance of education also is described in the economic profile, which presents an overview of each of the state's regions. As our guest author indicates, regions that have fared best are those with higher education levels, where per capita income is also higher.

Community colleges will play a vital role in cultivating tomorrow's workforce. In our article on this vital segment of the state's higher education system, we propose a collaboration between community colleges and local industry. These partnerships would focus on sectors of the economy representing California's emerging industries: bioscience, high tech communications, interactive media, international trade, and computer-aided fashion design. Working directly with local businesses, each participating college would develop programs tailored to reflect their region's particular strengths and labor force needs.

We also highlight one of these emerging industries: computer-aided fashion design. Our guest authors provide insights into the new high-tech world of the garment industry in which computer programs are utilized to develop ideas faster and more efficiently.

California's young people are our future. The decisions we make today will determine their ability to find successful and productive jobs and contribute to the state's leadership in the global economy. Our education system is the foundation upon which this future rests. Our commitment to strengthen it will return dividends far into the future.

KATHLEEN CONNELL
Controller
State of California

March 1997

California Economy

Controller's Outlook

The National Outlook

The nation's output of goods and services as measured by the Gross Domestic Product (GDP) grew at an annualized rate of 3.9% in the final quarter of 1996. While this rate of growth is not expected to continue into the first quarter of 1997, there is no indication that the strong rate of production resulted in an inventory buildup. Production in 1997 will thus not be hampered by overhangs of inventory from 1996. Reinforcing the optimistic outlook for 1997 is the fact that consumer confidence remains high, jobs are continuing to grow at a moderate pace (2.5% annual rate), unemployment rates are low (5.4% in January), and housing sales remain strong.

Perhaps the biggest news in the national economy recently has been the surge in stock prices that has occurred since August of 1996. In early December 1996, Federal Reserve Chairman Alan Greenspan warned of "irrational exuberance" in the equity market, triggering a sharp drop in market prices. The effects were short lived, however. By mid-March 1997, the Dow Jones Industrial Average had risen over 8%. On February 26, Greenspan warned that "excessive optimism sows the seeds of its own reversal." In addition, he cautioned that rising asset prices could lead to higher inflation and that a preemptive strike on inflation should not be ruled out. As a result, the probability of a hike in interest rates this year is considerably increased in the minds of most economists.

While neither an interest rate increase nor a correction in the stock market would necessarily trigger a recession, both these prospects are major uncertainties in the economy at the moment. The current economic expansion is now mature; at some point a slowdown in the economy is almost certain. As Chairman Greenspan said on the 26th, "There is no evidence that the business cycle has been repealed."

The California Outlook

The outlook for California continues to be optimistic. The January employment numbers, released at the end of February, showed a January 1996 to January 1997 gain of 2.9% in non-farm payroll jobs.

The monthly payroll employment numbers are based on a sample of firms in California. Once each year, the sample is revised to more accurately reflect the distribution of all firms reporting payroll taxes to the Employment Development De-

partment, a process known as benchmarking the sample. The January 1997 numbers are the first to reflect the new sample, referred to as the March 1996 benchmark sample. The new sample indicated that employment gains in California had been undercounted during the past year by approximately 57,000 jobs. For the state as a whole, the construction industry had the largest rate of increase in employment (6.2%), reflecting a strengthening real estate market, primarily in Northern California. The service industry produced the largest number of jobs (more than half), with business services accounting for 41% of the net gain in service employment. The unemployment rate in California remained unchanged from December to January, but at 6.8% was much lower than the 7.6% rate of January 1996.

The forecast by the Controller's Council of Economic Advisors reflects this optimism (Figure 1). The Coun-

"The real estate market appears to have turned the corner. Barring a substantial increase in interest rates, it is anticipated that 1997 will at last see a solid year for the industry. Indicators of a true revival are abundant."

Figure 1

1997 Forecast by Controller's Council of Economic Advisors

Council Member	Employment Growth (Annual %)	Unemployment (Annual %)	Personal Income Growth (Annual %)	Res. Building Permits (Thou)
LA Economic Devt. Corp. (J. Kyser)	2.6%	6.4%	6.5%	104
Calif. Assn. of Realtors (G.U. Krueger)	2.9%	6.6%	4.5%	140
UCLA, Business Forecasting Project (L. Kimbell)	3.1%	6.5%	5.7%	122
Bank of America (J.O. Wilson)	2.5%	6.8%	6.3%	105
Pacific Gas & Electric (T. Munroe)	2.5%	6.6%	6.2%	108
ARCO (A. Finizza)	3.2%	6.5%	6.0%	125
Mean	2.8%	6.6%	5.9%	117
Median	2.8%	6.6%	6.1%	115
State Controller	2.7%	6.5%	6.0%	120
1996 Actual	2.8%	7.3%	7.9%	94

Source: State Controller's Office; Council of Economic Advisors

Figure 2

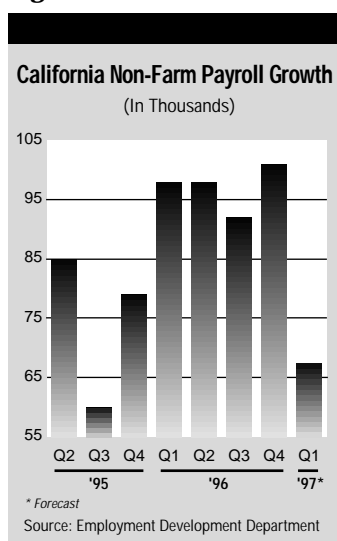
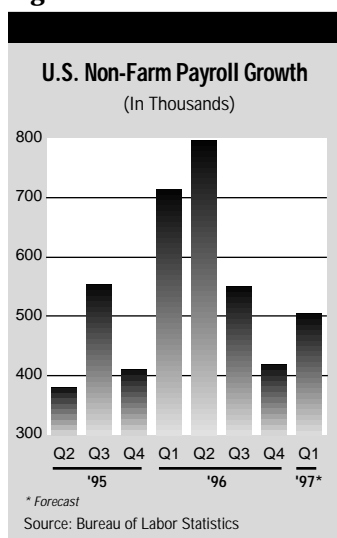


Figure 3



cil projects employment growth will be 2.8% in 1997 and unemployment to average 6.6%, down from the 1996 unemployment rate of 7.3%. The Council also is optimistic about building permits, which it anticipates will rise from the 1996 level of 94,000 to 117,000 in 1997. Average personal income is projected to grow by 5.9%. The State Controller's outlook is for job growth to be 2.7% in 1997, personal income growth to be 6%, and residential construction to reach 120,000 permits.

Employment Growth

The 1996 increase in employment was a more subdued 1.8% in Los Angeles County, where growth in construction, finance, insurance, and real estate lagged behind other sectors. Los Angeles continues to feel the impact of consolidations in the three latter industries and a depressed real estate market generally. The January unemployment rate in Los Angeles registered 7.7%. Although still a high rate, Los Angeles has seen a reduction in unemployment since last January, when it was 8.6%. Since Los Angeles represents roughly 29% of California's population and employment, its slow economic recovery is of significant concern to the state.

Figures 2 and 3 compare job growth in California and the nation during the past eight quarters.

Real Estate

The real estate market appears to have turned the corner. Barring a substantial increase in interest rates, it is anticipated that 1997 will at last see a solid year for the industry. Indicators of a true revival are abundant. The resale market is strong throughout the state, with both

Southern California and Bay Area sales posting year-over-year gains of more than 10% in December 1996, according to Dataquick. Prices in the Bay Area climbed, especially in higher-priced areas. Reports from the California Association of Realtors indicate that prices in San Francisco and Santa Clara counties have increased by roughly 10% over the past two years. The nine-county Bay Area experienced a 2.7% year-over-year increase in resale prices in November 1996, according to Dataquick. In Southern California, price increases are not yet consistent but appear to have stabilized.

A significant problem for real estate prices over the past three years has been a high level of foreclosures. Large numbers of foreclosures tend to have a dampening effect on prices. Foreclosures increased rapidly during 1995 but in recent quarters have leveled off. There is reason to believe that they will soon begin to decline. In 1996, lenders began to move aggressively in issuing Notices of Default (NODs) on delinquent loans. This caused a surge of foreclosures. The 44,846 NODs issued in the first quarter of 1996 was the highest ever recorded in a quarter. The crest now has passed; it is expected that foreclosure sales will begin to decline over the next few months. Even more encouraging, Dataquick reports that an increasing proportion of these homeowners have been able to emerge from the foreclosure process before their home is lost to the bank. Most of the foreclosure activity has been in Southern California, with more than 68% of first-quarter 1996 foreclosures. A drop in foreclosures, together with the general drop in resale inventory that

has occurred over the past year, should contribute to a firming of prices in Southern California.

Residential Construction

January 1997 building permits lagged from the previous year. This is almost certainly explained by bad weather. Residential construction was up by 10.2% in 1996 over 1995. It is expected that 1997 will be an even better year. The increase in single family home construction, however, was only 8.9%, while units in buildings of five or more units surged by 25.5%. Figure 4 depicts the change in construction rates for three categories of residential construction.

Currently, multi-family home construction comprises only 21% of residential construction in California. As recently as 1987, however, this category represented nearly 53% of residential construction. From 1986 to 1993, multi-unit construction fell by 90%, compared to a 75% decline in single-family home construction. This was related to demographic factors (a dearth of young adults), the recession (young people unable to find jobs and thus remaining with parents), and out-migration. The number of young adults is now increasing and jobs are easier to find, so it is not surprising that the rebound in apartments should occur.

Figure 4

Growth in CA Residential Permits Issued (1995-1996)	
Type of Bldg:	% Change:
Single	8.90
Family	
2-4 Units	-15.19
5+ Units	25.52

Source: Construction Industry Research Board

California's Education Gap

California's educational system has a history of achievement. Much of the state's economic success is due to the excellence of this system. California's premiere colleges and universities historically have educated not only the state's own high school graduates but also students from around the country. Twenty years ago, California was a national leader with more than 60% of its high school graduates attending California's colleges and universities.

In recent years, however, high school dropout rates and college enrollment patterns in California have shown a disturbing trend. At the same time that a high percentage of students are dropping out of California high schools, fewer high school graduates are enrolling in colleges within the state. Though California continues to have a high percentage of its population holding college degrees relative to the rest of the nation, it appears to be caused by people moving to California who have received degrees elsewhere, rather than more of California's high school graduates attending California's colleges and universities.

The findings described in this study suggest there is an invisible barrier, an education gap, between high school and college in California that does not match national trends. The causes and solutions to this education gap need to be identified. Meeting the challenges of the next century will mean fully realizing the potential of all of California's young people, the

foundation upon which the state's economic future rests.

High School Graduation Trends

The state has long been a leader in the nation in the percentage of its population that completed both high school and college. While it continues to have a higher percentage of the population that has graduated from college, California also is becoming a leader in the percentage of its population that has never completed high school. Figure 1 presents high school completion data for the 15 largest states.

According to the most recent U.S. Census (1990), 14.2% of Californians ages 16-19 neither completed high school nor were enrolled; nationally, this figure was 11.2%. Only Arizona, Florida, and Nevada had higher high school dropout rates than California. The states with the lowest dropout rates tended to be smaller and less urban, such as North Dakota (4.6%) and Minnesota (6.4%). However, some large urban states do have dropout rates that are below the national average, such as Massachusetts (8.5%), Ohio (8.9%), and New York (9.9%). This would suggest that these states have found ways to keep their urban young people in school.

The California Department of Education tracks dropout rates by measuring the number of 9th grade students who remain in school through 12th grade. This "four year completion rate" indicates that 19% of the California class of 1994 did not graduate from high school.

Taking into account that some of these students may have passed a General Educational Development (GED) exam, this still indicates a very large portion of California's young people are not completing high school. The 1994 completion rate for Los Angeles County is even more troubling. With a 24.9% dropout rate, it has the most high school dropouts, by far, of any urban county in California. Alameda County trails a distant second with a 14.9% dropout rate. Two of the state's rural counties have the highest dropout rate in California: Madera County's dropout rate in 1994 was 26.2%; Kern County's was 28.9%. This means that more than one out of every four high school students in these counties will be seriously hampered in their ef-

"It is clear that the state's economic prosperity is directly linked to the education and earning potential of its citizens."

Figure 1

Years Of School Completed By Persons Age 25 And Over In The 15 Largest States

State	Less than High School	High School	Bachelor's Degree or more
United States	19.8%	80.2%	21.9%
California	20.3%	79.7%	25.0%
Florida	20.4%	79.6%	19.8%
Georgia	25.3%	74.4%	21.1%
Illinois	20.8%	79.2%	22.1%
Indiana	20.8%	79.2%	14.1%
Massachusetts	15.4%	84.6%	30.0%
Michigan	18.5%	81.5%	19.1%
Missouri	19.7%	80.3%	20.3%
New Jersey	17.9%	82.1%	27.9%
New York	19.3%	80.7%	24.2%
North Carolina	25.2%	74.8%	18.5%
Ohio	17.2%	82.8%	19.5%
Pennsylvania	20.2%	79.8%	18.7%
Texas	22.7%	77.3%	22.1%
Virginia	19.3%	80.7%	25.8%

Source: U.S. Dept. of Commerce, Census Bureau, Current Population Reports, Series P-20, No. 476, Educational Attainment in the United States: March 1993.

Currently, poverty appears to affect college enrollment rates more than ethnicity.

forts to compete in a job market that is demanding higher skills. As Figure 2 indicates, the median income for males age 25-34 without a high school diploma is only \$14,277 annually. (The 1996 federal poverty level was \$12,547 for a family of three.)

Statistics indicate that California directly benefits from a highly educated population as the level of income a person earns is directly related to the amount of education he or she has achieved. For example, Figure 2 illustrates that the median income of college graduates is more than twice that of males of the same age with no high school diploma. The state income tax collected from taxpayers with a median income of \$32,116 averages ten times the amount collected from those with an income of \$14,277. Statistics also show that among families receiving federal aid, 50% of mothers and 54% of fathers did not finish high school. It is clear that the state's economic prosperity is directly linked to the education and earning potential of its citizens.

Rapid growth in the school-age population, and the resulting increase in the per capita cost of education, could make closing the education gap even more challenging. Between 1991 and 1996, the number of high school graduates in the nation grew by 3.1%. In California, because of the state's rapidly increasing population, the number of graduates grew by almost 12%. Over the next decade, the young adult population in California is expected to continue growing at a faster rate than in the rest of the nation. The same will be true of the elementary and secondary school populations. Between 1990 and 1995, the number of

Figure 2

Median Income of Males Ages 25-34 in 1994				
	Less Than High School	High School Diploma	Some College	Bachelor's Degree/Higher
Income	\$14,277	\$21,180	\$24,214	\$32,116
Income Ratio Relative to "Less than High School"	1.00	1.48	1.69	2.25

Source: 1995 Current Population Survey, Bureau of the Census

5- to 17-year-olds in the nation grew by about 9%; for California, the growth was 12%. Between 1995 and 2005, the growth in the number of students in kindergarten through 12th grade is projected by the Department of Finance to be approximately 18%; the increase in high school graduates, about 28%. These rates will exceed the population growth of the state and possibly the economic growth rate as well. (The UCLA Business Forecast projects a long-term growth rate of approximately 1.2% for population and 2.0% for the economy.)

College Enrollment Trends

In addition to maintaining a high dropout rate relative to the rest of the country, a larger number of California's high school graduates are not enrolling in California's colleges, public and private. This may also imply a decline in the percentage of the state's high school graduates who are enrolling in colleges anywhere in the U.S.

Figure 3 indicates the rate of college attendance in the 12 months after high school graduation for California and the nation from 1977 to 1995. The California data measures enrollment of California high school graduates in colleges in California, while the U.S. data measures enrollment of high

school graduates nationwide in any college in the country. The data show that in-state college attendance for Californians has declined over the 19-year period, falling below that of the nation as a whole. This has occurred at the same time that the college attendance rate nationwide has increased. While the increase in fees that took place during the recession of 1990-93 appears to have had an impact on the state university system, the trend actually started much earlier. As Figure 3 illustrates, California's college enrollment rates peaked in the early 1980s.

This declining percentage of enrollment in California's colleges departs from the national trend in another area as well. The percentage of students taking the Scholastic Aptitude Test (SAT) has risen in California, as it has in the nation. Nationwide, this increased number of students taking the SAT has been accompanied by a larger percentage of students going on to college. In California, however, this does not appear to be the case.

In 1994, 53% of California's high school graduates enrolled in California colleges; an additional 4% enrolled at institutions outside the state. This compares to a national average overall attendance rate of almost 62%. Since California public colleges and universities

are inexpensive compared to public and private colleges elsewhere, this would suggest there are issues unrelated to cost that need to be addressed.

Factors Contributing to the Education Gap

One factor behind the high dropout rate and the decreasing percentage of high school graduates attending California colleges may be income growth. The nation as a whole has experienced more rapid income growth than has California. In 1980, per capita income in California was about 17% higher than in the nation. By 1994, it was only 3% higher than the rest of the nation.

Conversely, California's poverty rate has risen more rapidly than the national rate. In 1980, only 11% of California's population lived in families with incomes below the poverty line, compared to 13% of the nation's population. By 1994, 14.5% of the U.S. population was living in poverty; in California the rate was 17.9%. Only

five states (Louisiana, Kentucky, Mississippi, New Mexico, and Texas) had higher poverty rates than California in 1994. In the public schools of California, 26.6% of the children live in households with income levels low enough to qualify them for free or subsidized lunches.

Currently, poverty appears to affect college enrollment rates more than ethnicity. The U.S. Department of Education studied high school seniors' plans to attend college in 1982 compared to 1992. In 1982, the discrepancy among ethnic groups was considerable. By 1992, the responses among ethnic groups showed relatively little variation: 83.4% for Asians, 76.6% for Whites, 75.4% for Hispanics, and 75.2% for Blacks. By contrast, only 60.3% of high school seniors in the lowest 25% of family income planned to go to college the next year, while 91.1% of seniors in the highest 25% of family income stated their intention to attend college.

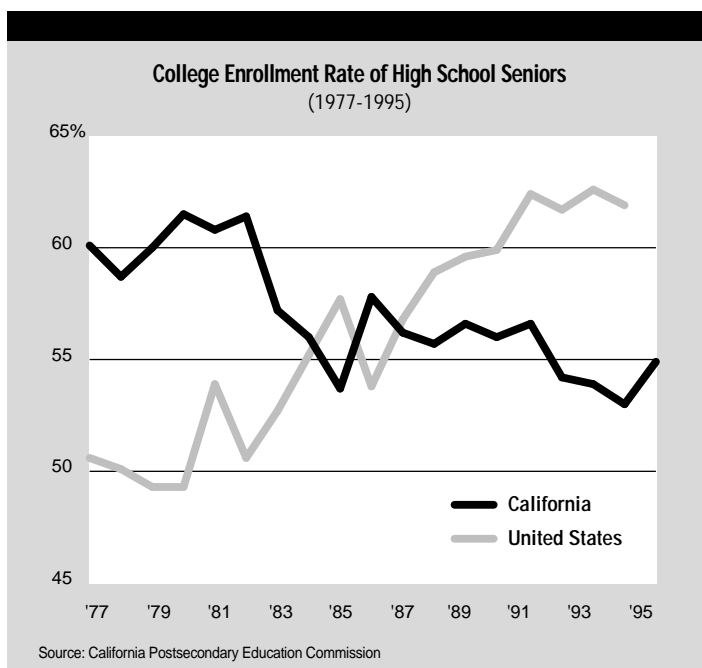
The issue of increasing pov-

erty among Californians has a direct bearing on the high dropout rate and the declining California college attendance rate. However, the full reasons behind this education gap, as well as its solution, will require further research and analysis. Why isn't California's dropout rate following the same decline evident in the rest of the nation? Why are fewer of the state's high school graduates choosing not to attend California's colleges and universities?

The job market in California increasingly calls for well-educated, highly skilled workers. It is imperative that the state find ways to ensure a larger number of students cross this invisible barrier, this education gap, from California's high schools to its postsecondary institutions. If these young people continue to drop out of high school or leave the state for a college education elsewhere, neither the state nor these young people will reach their full potential.

"The job market in California increasingly calls for well-educated, highly skilled workers. It is imperative that the state find ways to ensure a larger number of students cross this invisible barrier, this education gap, from California's high schools to its postsecondary institutions."

Figure 3



California's Community Colleges

Creating An Industry Partnership

"State Controller Kathleen Connell has proposed that each of California's 106 community colleges form a partnership with local industry. These partnerships would focus on sectors of the economy representing California's five emerging industries... These areas have a large and growing need for skilled workers.

The goals of the State Controller's Community College Industry Partnership are to prepare the workforce to fill this growing need and stimulate economic growth throughout the state."

California's success in the global economy of the 21st Century will depend on its ability to cultivate a highly skilled workforce capable of adapting to the technological changes that are occurring at light speed in the workplace.

The elements of a successful strategy already exist. They can be found in California's expanding and diverse workforce, in its education infrastructure, and in the creative abilities of the entrepreneurs who are utilizing advanced technology to maintain a leadership position in their respective fields.

How do we bring these elements together to meet the workforce needs of the next century? A new partnership is needed, a collaboration between California's emerging industries and one of the state's great institutions — the Community College System.

State Controller Kathleen Connell has proposed that each of California's 106 community colleges form a partnership with local industry. These partnerships would focus on sectors of the economy representing California's five emerging industries: bioscience, high tech communications, interactive media, international trade, and computer-aided fashion design. These areas have a large and growing need for skilled workers. The goals of the State Controller's Community College Industry Partnership are to prepare the workforce to fill this growing need and stimulate economic growth throughout the state.

Under this partnership,

community colleges would create programs that focus on the emerging technology sectors, working directly with their advisory board of business executives to outline a degree program. Each program would be tailored to reflect the region's particular strengths and labor force needs. While the colleges would retain their autonomy, local industries would collaborate with them to develop leading-edge curriculum, provide speakers and instructors, and establish internship programs for students and college instructors. Businesses also would be encouraged to provide state-of-the-art equipment for training purposes and help ensure that college programs are in sync with changing workplace technology. This component will be strengthened greatly if tax-benefit legislation proposed by the State Controller and sponsored by Assemblyman Ted Lempert (D-Palo Alto) is enacted.

The Community College proposal would be implemented in phases, with the initial focus on selecting five "pilot" colleges to be partnered with the state's emerging industries. The experience gained from these pilot programs would be "models" for others throughout the state.

Community colleges already fill a vital role in the state's system of higher education. California's "Master Plan of Higher Education," enacted by the Legislature in 1960, outlines the mission of each of the four components in the post-secondary system: community colleges, University of Califor-

nia (UC), California State University (CSU), and private institutions. The role of the two-year community colleges, formerly called "junior colleges," is to offer courses that enable students to transfer to four-year colleges and universities as well as to provide vocational-technical education. In addition, community colleges offer general academic courses leading to an Associate in Arts and Associate in Science degrees. Decisions regarding their curricula rest with the individual colleges, allowing local priorities and interests to be taken into account.

School-to-work programs have a history dating back as far as the Land Grant College movement of the mid-1800s. Over the years, educators struggled to adjust their programs to meet the demands of business and industry, but job training did not track the economy. Many local programs failed because they did not mirror the labor market. Experience has shown that job training programs are more likely to succeed if they are tailored to meet local needs.

Preparing tomorrow's workforce requires more than just the state's institutions of higher education. The entire public education system of California needs to be based on its future economic opportunities. This will enable California's schools to better prepare students for a seamless transition into well-paying jobs with a future so they can support their families, pay home mortgages, and enhance their quality of life.

Industry Profile:

Computer-Aided Fashion Design

The garment industry, a strong presence in California, has given rise to an exciting new growth sector for the state, one that holds great promise of expanding the middle-income jobs base. High tech and high fashion have come together. Computers are being utilized in every aspect of apparel manufacturing, from initial concept through sewing. Where clothing designers and pattern-makers once developed ideas with pen, pencil, scissors, and thimbles, computer applications now speed the process, increase efficiency, and expand possibilities. Computer-aided design (CAD) and computer-aided manufacturing (CAM) systems are transforming the industry in California, pushing it toward becoming one of the premiere employment magnets of tomorrow.

CAD/CAM systems were introduced to the textile and clothing industry almost 30 years ago — Hughes Apparel Systems first developed systems to manufacture clothing in 1968. However, due to the high cost of running those earlier computer systems, even the largest manufacturers shunned them until the 1980s. Now, as systems become more cost effective, greater numbers of clothing design and manufacturing companies are relying on computers and discovering the extent to which they can revolutionize the workplace.¹

Computers are used for garment design and illustration, textile design, pattern making, grading, marking, cutting, and sewing. The possibilities for the future appear endless. Gerber Garment Technologies, with offices in California, is an international leader in the development of computer-integrated manufacturing (CIM) technology, of which CAD and CAM are key components. These systems offer design information for use in merchandising, marketing, and sales, then create samples, mark fabric, and cut pieces, even locating flaws or color variations in the fabric. At companies like Patagonia, installing a CAD/CAM system has been a lifesaver. Before computers, if one of the company's designers wanted to see a different scale of a print or plaid, it would have to be painted by hand. Patagonia says the CAD/CAM system offers more control, saves money, and eliminates waste.

As technology becomes increasingly sophisticated, industry watchers are predicting that CAD/CAM systems will move beyond fashion design into digital printing of fabrics. Digital printing creates fabric prints that are designed and generated from a computer, allowing manufacturers to meet the demands for short runs and frequent style changes that dominate today's fashion industry.

Apparel manufacturers and

retailers will no longer have to buy from fabric mills and converters that require them to commit to huge minimums up front. With digital printing, manufacturers in high-wage countries such as the U.S. will be better able to compete against low-wage suppliers by providing lower minimums on goods that can be replenished mid-season after they have been proven to sell.²

With all the talk about dazzling computer technology, it is easy to forget that machines cannot function alone. Studies of the clothing and textile industry have shown that manufacturers are unable to find trained, skilled workers.³ In order for CAD/CAM to continue its streak of success in the clothing industry, colleges, corporations, and manufacturers must work together to provide the proper training for workers who want to move into these new high technology positions but currently are not qualified. By providing first-rate education and training, many of the best and the brightest will be attracted to this emerging California industry.

"Where clothing designers and pattern-makers once developed ideas with pen, pencil, scissors, and thimbles, computer applications now speed the process, increase efficiency, and expand possibilities."

¹ Hardaker, Carolyn H.M. and Gary J.W. Fozzard, "Computer-aided Designers?: A Study of Garment Designers' Attitudes Toward Computer-aided Design." *International Journal of Clothing Science and Technology*, v. 7, n. 4 1995 (England).

² Information on digital printing is drawn from "Digital Printing: Prelude to the Revolution" by IT Strategies Inc., *Bobbin* v. 38, n. 5 January 1997 (Columbia, S.C.).

³ For an example of these studies, see "Computer-aided Designers?: A Study of Garment Designers' Attitudes Toward Computer-aided Design" in *International Journal of Clothing Science and Technology* v. 7, n. 4 1995.

Clothing Company On The Cutting Edge



**By Lu Setnicka
and
Judy Williams**
Patagonia, Inc.

"In the future, companies that have not moved forward with advanced technology such as CAD may find themselves falling behind. It not only makes large companies more competitive, it also carries similar benefits for small and medium-sized apparel business such as Patagonia."

Patagonia, Inc., based in Ventura, California, is known internationally for its high quality technical outdoor clothing and commitment to reducing the environmental impact of its operations. Every year the company pledges 1% of its sales or 10% of its pre-tax profits to environmental organizations working to preserve biodiversity by engaging public citizens in their own local issues. Assessing environmental impact has become another piece of the design puzzle along with quality, performance, availability, and cost. Throughout the company, employees are charged with looking at the work they do and creatively coming up with ways to be part of environmental solutions.

One area where environmental impact has been lessened by way of reducing waste is Patagonia's move to Computer-Aided Design (CAD) and Computer-Aided Manufacturing (CAM). Approximately ten years ago, CAD/CAM systems were introduced at Patagonia. Initially, the emphasis was on

production, pattern grading, and fabric marking, but within a year the focus broadened to include garment design, textile design, and patternmaking. According to Judy Williams, Patagonia's CAD Supervisor, the design and manufacturing process has allowed Patagonia to expand choices, exert greater control, and speed response time.

Prior to CAD implementation, textile designs had to be hand painted. Usually about five colorways were generated for each textile design, and it would take a day or longer to paint each colorway. With CAD, original art can be scanned in, recolored very quickly, and printed out. Sometimes as many as 25 different color ideas are tried and presented to merchandisers, designers, and potential customers before the perfect coloration is found. Textile designs are then put in repeat using the application software, and the final art is transferred, often electronically, to a fabric mill for production.

Selected textile designs can be prototyped onto a drawing or photo of a garment. These facsimile garments can be used for line storyboards and sales presentations. Garment and textile design ideas that are not well received need never be produced, thus reducing waste and discontinued merchandise that might otherwise have to be discarded or sold at a loss. CAD facsimiles also allow Patagonia to produce only what it projects to sell. For example, a yellow plaid shirt generally sells less well than a blue plaid shirt. The yellow shirt, however, has an important role in creating visual diversity in the line and in the retail environment. Using CAD prototypes of shirts, the number of yellow plaid shirts

that are actually able to be sold can be more closely identified, and only that number needs to be produced.

In the future, companies that have not moved forward with advanced technology such as CAD may find themselves falling behind. It not only makes large companies more competitive, it also carries similar benefits for small and medium-sized apparel business such as Patagonia. At the same time, jobs in this industry increasingly will require training in high-tech skills. Needles, thread, and scissors may never disappear from the apparel industry — they'll just be joined by a mousepad and monitor.

Garment 2000: Preparing Tomorrow's Workforce



By Del Anderson
Chancellor

City College of San Francisco

The U.S. apparel sector is widely viewed as an industry that has lost its ability to compete in the global economy. Admittedly, much evidence supports this proposition. Between 1979 and 1992, employment in the apparel industry fell from 1.3 million to 1 million workers. These figures meant that more than one of every five garment workers lost their job during this period. Trade figures paint another troubling picture. In 1979, apparel contributed \$5 billion to the U.S. trade deficit. Thirteen years later, that figure reached \$28.5 billion, one-fourth of the entire 1992 trade deficit.

In addition to the charge that garment is an industry of the past, the sector suffers a tarnished reputation as the generator of "sweatshops." This image has been exaggerated during the past year when media attention focused on labor law violations in the industry and the wretched conditions of over-worked and under-paid garment workers.

Yet amidst the darkness of lost competitiveness and sweat-

shop conditions, innovative programs have emerged that are seeking to revitalize the industry and create new opportunities for garment workers. One of these efforts is *Garment 2000*, a San Francisco/Bay Area-based program that was launched in 1994 to strengthen local small and medium-size apparel businesses and to thereby retain and improve the 25,000 jobs that these companies generate.

Garment 2000 was developed by a unique consortium of industry stakeholders, which includes local small and medium-size garment contractors and manufacturers, organized labor, City College of San Francisco, the City of San Francisco, and the local district office of the U.S. Department of Labor. The program's mission is to reposition the industry to compete on quality and quick response instead of price. Hence, whereas industry's traditional response to the challenge of low-wage production abroad was to try to cut its own prices, *Garment 2000* promotes a strategy that shifts the emphasis of production from high volume to higher value/higher quality manufacturing.

Workforce development plays a central role in this revitalization process, whose tools for change include: training sessions and workshops aimed at upgrading the skills, knowledge, and abilities of individual workers at all levels of production; technical assistance aimed at approving the processes and productivity of individual companies; and demonstrations and applications of the latest technology.

To date, two years after implementation began in March 1995, hundreds of production workers have attended

the program's training modules in vocational English as a second language, sewing equipment repair, productivity, quality control, supervision, and team production. Several hundred managers have participated in short-term workshops on computer applications in apparel production, labor law compliance, costing, modular production, and rate setting. Additionally, 42 small apparel businesses have received 1,300 hours of customized technical assistance from *Garment 2000* industry experts to improve productivity, quality control systems, and other key areas.

Garment 2000's crowning achievement to date is development of a state-of-the-art Teaching Factory. It was inaugurated in April 1996 by U.S. Labor Secretary Robert B. Reich, who praised *Garment 2000* as a "model program which demonstrates how America's traditional manufacturing industries can position themselves to compete in the global economy." Located at City College of San Francisco, the facility hosts most of the program's training activities, demonstrations, and simulations. The San Francisco Mayor's Office of Community Development underwrote the site construction. Private companies, such as Juki America and Karat Systems, provided more than \$190,000 worth of state-of-the-art sewing equipment.

Garment 2000 challenges all of us — educators, business, and labor leaders — to explore how we can work together to strengthen America's industries and create better jobs for our workers.

"Garment 2000's crowning achievement to date is development of a state-of-the-art Teaching Factory. It was inaugurated in April 1996 by U.S. Labor Secretary Robert B. Reich, who praised *Garment 2000* as a "model program which demonstrates how America's traditional manufacturing industries can position themselves to compete in the global economy."

California Regional Profiles



By Tapan Munroe
Chief Economist
and
Bill Jackman
Economist,
Pacific Gas & Electric

Overview

California's economic resurgence began in 1993, the low point of the 1990-93 recession. It shifted into high gear in 1996, when the state's rate of job growth (2.6%) exceeded the nation's (2.0%) for the first time since 1992. This pattern is expected to continue in 1997, with 2.3% job growth for the state compared to a national rate of 1.5%.

The good news for California is not just job growth but income growth as well. Between 1991 and 1995, personal income growth in California lagged behind the nation. In 1996, however, California surpassed the nation in income growth as a result of continued progress in higher-wage jobs in sectors such as computer software and hardware, semiconductors, biotechnology, and entertainment. These are sectors in which California has a competitive advantage in the "new" global economy.

Not all regions have fared equally well in this recovery and restructuring. Regions with at-

tributes favorable to a knowledge- and information-based economy generally have done better. For example, there is a striking correlation between the level of education of a region and its per capita income (Figure 1).

San Francisco/Bay Area

The Bay Area, especially Silicon Valley, has become the model of the knowledge- and information-based "New Economy." Silicon Valley is an excellent example of how a high-wage area can thrive in today's global economy. Leadership in technology, entrepreneurship, venture capital, and exports is key to the Bay Area's success.

Silicon Valley's strong economic expansion has put pressure on the supply of skilled workers and housing. In November 1996, Santa Clara County's unemployment rate fell to 3.3%, its lowest level in almost seven years. Apartment occupancy rates there are over 99%; average rents are close to \$1,450, highest in the nation. Its home sales market is surging: total sales in Santa Clara County in January 1997 were 11.3% higher than in January 1996, and the median price jumped to \$275,000, a 13.6% year-over-year increase.

Although Silicon Valley has been a standout in the housing recovery, home sales and prices have rebounded in the Bay Area as a whole. Sales of previously owned homes in the nine-county region jumped from 3,362 in January 1996 to 3,681 in January 1997, a 9.5% increase. The median price rose from \$219,000 to \$233,000, a 6.4% year-over-year increase. This was the Bay Area's 13th consecutive price increase, nearing the all-time record of

\$251,000 attained in June 1990 and closer still to the record for January (\$243,000), also in 1990. Total sales rose for the 17th time in the past 18 months.

It also is notable that with 2% of the U.S. population, the Bay Area attracts 35% of the nation's venture capital. In the third quarter of 1996, the largest share of these funds (44.5%) flowed to the communications/networking segment. Software and information services was in second place with a 24.2% share.

Sacramento Region

The Sacramento region is an emerging high tech center and already has a major high tech manufacturing sector. The area added more than 2,000 new high technology jobs during 1995, bringing total employment to over 15,000. The major products are personal computers and computer chips; companies include Packard Bell, Hewlett-Packard, Intel, NEC, and Apple Computer.

Although high tech manufacturing is the dominant activity, research and development is burgeoning as well. For example, Intel is expanding its research operations in Folsom and will eventually add 1,750 jobs. This will increase Intel's Folsom workforce to 4,700, making it the region's largest manufacturer. With research and development to support its high tech manufacturing, Sacramento could well become "Silicon Valley East."

Software development is an important, knowledge-intensive industry of the New Economy. It creates well-paying jobs. Oracle, the world's second-largest software company, announced it will build a 100,000 square-foot data center at

"The good news for California is not just job growth but income growth as well... In 1996... California surpassed the nation in income growth as a result of continued progress in higher-wage jobs in sectors such as computer software and hardware, semiconductors, biotechnology, and entertainment. These are sectors in which California has a competitive advantage in the 'new' global economy."

Stanford Ranch in Rocklin that eventually will employ more than 1,100 people. This marks the Sacramento region's emergence as a center for software development.

The Sacramento region also has become a center of "back-office" operations. Attracted by the region's low cost of doing business and its relative safety from earthquakes, back-office financial and other business services have been migrating from the Bay Area to the Sacramento area. These activities include redundant database operations and back-up operations of computer systems.

Los Angeles Region

The Los Angeles region's economy, while clearly in recovery, has lagged behind the rest of the state in job creation by half a percentage point or more during most of the recovery. Moreover, job growth in the region has been concentrated in a few industries. Four sectors account for more than 90% of all jobs created over the last 12 months. In order of most jobs created, these four sectors are: services, particularly business services; trade, especially retail; construction; and education.

A positive development for California this past year has been a rebound in manufacturing, particularly high tech manufacturing. Roughly 29,000 jobs were added, even as the manufacturing sector continued to shrink nationwide. However, most of this growth has been in northern California, predominantly in Silicon Valley and Sacramento. Of the 20,000 jobs created statewide in durable manufacturing, the Los Angeles region contributed only 24%. (The Los Angeles region represents almost half the state's population and non-farm jobs.)

There has been considerable

concern about the quality of the new jobs being created in the region. According to the UCLA Business Forecasting Project, a large proportion of the new jobs created in Los Angeles County during 1995 were in retail trade, apparel manufacturing, business services, and social services. These industries all pay well below the average salary per worker in the county. Moreover, employment in the higher-paying industries continued to shrink. This was especially true for jobs in finance and insurance, durable manufacturing, public utilities, and government. The study revealed the average annual salary of new jobs created in 1996 was \$24,730, just 73% of the average wage and salary per worker in Los Angeles County (\$33,808).

Between 1990 and 1995, as aerospace and defense companies were laying off thousands of employees, the entertainment industry created 95,000 jobs, many of them well paying. However, the UCLA Business Forecasting Project found that the distribution of salaries in the latter industry is much more dispersed than in the former: The weekly *average* (\$1,233) is inflated by the relatively few huge entertainment salaries, making it more than three times the weekly *median* (\$370). In contrast, the *median* for aerospace (\$718) is much closer to the aerospace *average*, which ranges from \$792 for its aircraft and parts sector to \$876 for the industry's missiles and space sector.

The most significant recent change in Southern California's aerospace future is the \$13.3 billion merger of Boeing with McDonnell Douglas. Boeing now ranks as perhaps the largest industrial employer in the state with about 42,000 employees, including 14,500 California

employees that came with its previous acquisition of Rockwell International's aerospace business. The merger appears beneficial for workers in Southern California. However, it is not yet clear what it will mean for the region.

Central Valley/Sierra Region

This region has succeeded in attracting diversified manufacturing even as jobs in this sector decline nationwide. Some of this is high tech manufacturing — notably in San Joaquin County — which has spilled over from coastal areas, mainly Silicon Valley. However, agriculture and related industries (such as food processing and distribution) are the backbone of the Central Valley's economy. Six of the top ten agricultural counties in the U.S. are found in the fertile San Joaquin Valley. Fresno County alone, the most productive county in the nation, outproduces 24 states. The Central Valley produces 250 different crops, from almonds to zucchini. Almost two-thirds of California's \$20 billion in farm sales in 1994 were from the Central Valley.

Despite the severity of the January 1997 floods, California's \$22.1 billion agriculture economy came through in fairly

"[San Diego] has quietly become one of the country's leading centers of commercial medical research. Roughly 250 biotechnology companies and medical-device makers, most of them small, early-stage research shops, have been established here since the mid-1980s."

Figure 1

Ranking of Seven California Regions (Ranking - 1 is the highest)

Region (# of counties)	Population	Jobs	Population with College Degree	Per Capita Income
Los Angeles (6)	1	1	5	5
San Francisco (9)	2	2	1	1
Sacramento (4)	3	3	4	4
Central Valley/Sierra (16)	4	4	7	6
Central Coast (4)	5	5	3	3
San Diego (1)	6	6	2	2
Northern California (18)	7	7	6	7

Source: U.S. Bureau of Labor Statistics, Terrier database

California's Regions

Los Angeles Region—Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura counties

SF/Bay Area—Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma counties

Sacramento Region—El Dorado, Placer, Sacramento, and Yolo counties

Central Valley/Sierra Region—Alpine, Amador, Calaveras, Fresno, Inyo, Kern, Kings, Madera, Mariposa, Merced, Mono, San Benito, San Joaquin, Stanislaus, Tulare, and Tuolumne counties

Central Coast—Monterey, San Luis Obispo, Santa Barbara, and Santa Cruz counties

San Diego Region—San Diego County

Northern California—Butte, Colusa, Del Norte, Glenn, Humboldt, Lake, Lassen, Mendocino, Modoc, Nevada, Plumas, Shasta, Sierra, Siskiyou, Sutter, Tehama, Trinity, and Yuba counties

good shape. Dollar losses from property damage were far greater than crop losses. Farmers suffered extensive damage to farm equipment and buildings. Flooded farmland has to be drained and restored.

The Sierra portion of this region contains three national parks — Yosemite, Sequoia, and Kings Canyon — which are top attractions for vacationers. Yosemite National Park had 3.5 million visitors in 1993. The number keeps growing. During January 1996, Yosemite Valley was slowly drying out after what park rangers were calling the worst flood there in recorded history, leaving behind hundreds of upturned tent-cabins and acres of wrecked camping sites. The park closure was the longest ever.

Northern California

With 25% of the state's land and 4% of its population, this region contains some of the nation's richest agricultural and timber resources. Forest products, agribusiness, and seafood processing have been the basis of the region's economy. The forest industry, however, is in a transitional stage; jobs in this industry are scarce.

This region is richly endowed with environmental amenities. Tourism is increasingly important, providing jobs to replace those lost in logging. Service industries have grown in support of the region's resource-based economy. There also has been growth in manufacturing. Manufacturers of medical equipment and supplies have established facilities in Shasta County. Nevada County is home to major electronic equipment manufacturers.

The agriculturally rich Sacramento Valley was hit hard by flooding that resulted from levee breaks. More than 20

levees, most of them in the Central Valley, failed during the January storms. The levees are a critical part of the region's infrastructure, and many are in need of major maintenance.

San Diego Region

Job growth slowed in San Diego County during 1996, averaging approximately 1.8% compared to 2.1% during 1995. In contrast, 1996 job growth in neighboring Orange and Riverside/San Bernardino counties was 2.5% and 2.7%, respectively. The fastest-growing sector was public education, where jobs increased 4.5%; much of the hiring was due to class-size reduction efforts.

The region has lost much of its high tech military manufacturing base, encompassing aerospace, instruments, and electronics. The local aerospace industry has largely disappeared. However, San Diego was spared in all four rounds of base closures; and will benefit from relocation of personnel and activities from bases closed elsewhere.

Despite the defense spending that will come its way, San Diego is diversifying its economic base. It has quietly become one of the country's leading centers of commercial medical research. Roughly 250 biotechnology companies and medical-device makers, most of them small, early-stage research shops, have been established here since the mid-1980s. With 29 publicly held drug companies, San Diego last year surpassed the Washington, D.C. area to become the nation's number-three commercial biotech center. It trails only the Bay Area and Boston, where gene-splicing technology was invented. San Diego's highly regarded research centers, as well as its quality of life and a supportive government,

are the main draws. Despite San Diego's biotech promise, however, the industry is still in a research and development phase. It lacks the essential elements of success: commercial products, profits, and jobs.

Central Coast

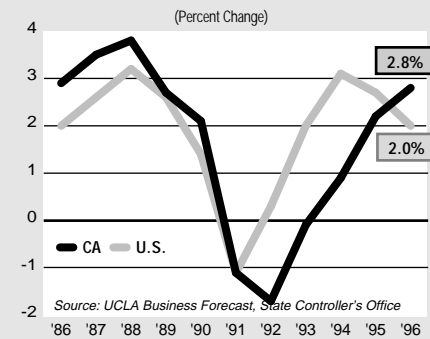
Two southern counties of this region, Santa Barbara and San Luis Obispo, like much of Southern California, have lagged behind the rest of the state in their economic resurgence. Employment opportunities in Santa Barbara County have been relatively scarce during most of the labor market recovery. However, job growth recently accelerated; since July 1996, the annual rate of employment growth has averaged 2.1% each month, the best labor market performance since the first quarter of 1991. Still, both Santa Barbara and San Luis Obispo counties suffer from what appears to be a structural problem: the lack of commercial development and the inability to create or import higher-paying jobs. Industries that have downsized, such as utilities, high technology, and finance, have eliminated high-paying jobs, which are not being replaced.

Monterey and Santa Cruz counties, close to Silicon Valley, are experiencing a broad-based and solid economic recovery. The counties have strengths in agribusiness, tourism/hospitality, marine science and environmental technologies, education, and high tech business services. The conversion of Fort Ord to educational and commercial activities is a model for base conversion. The new campus of California State University located there already is enhancing the ties between the region's colleges/universities and businesses.

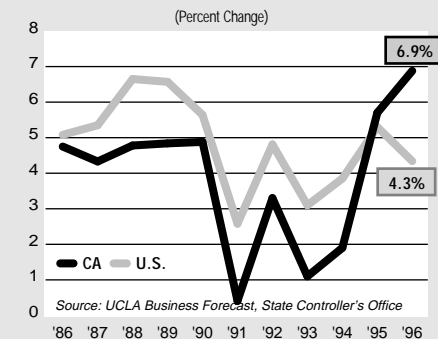
Facts and Figures

Important Information About California

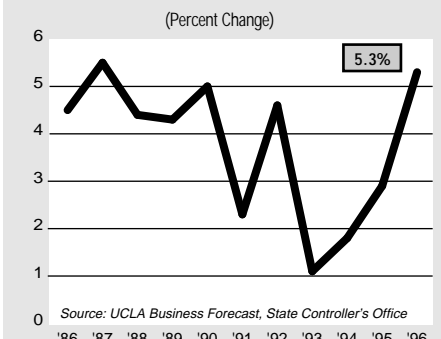
Non-farm Employment Growth, CA vs U.S.



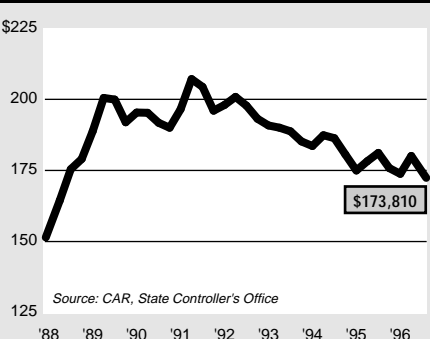
Per Capita Income Growth, CA vs U.S.



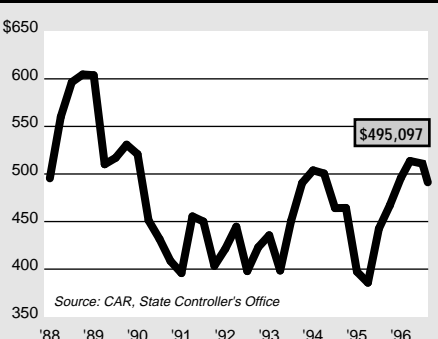
Average Annual Salary Growth, CA



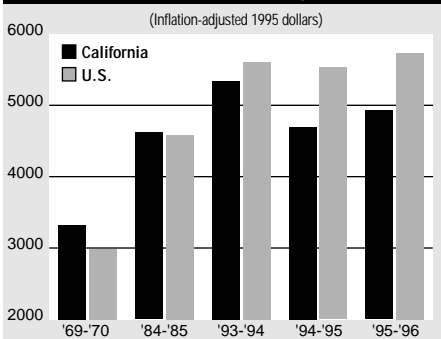
Median Home Price (In Thousands)



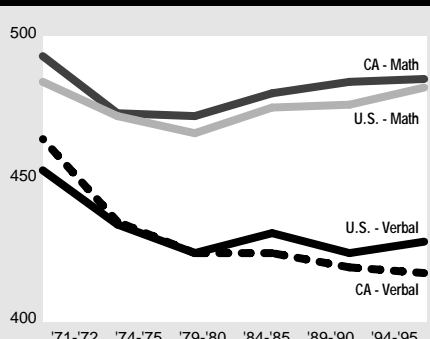
Single Family Home Sales (In Thousands)



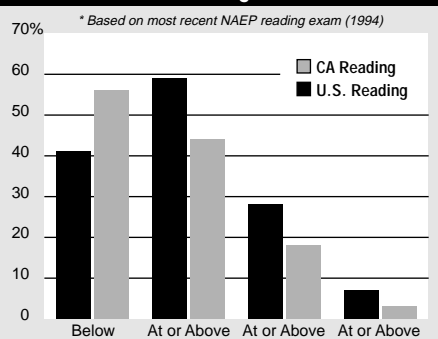
Public K-12 Per Pupil Spending, CA vs U.S.



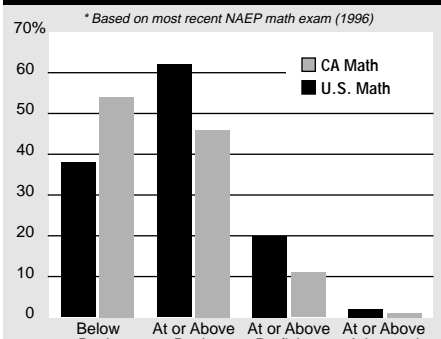
SAT Scores, CA vs U.S.



Public 4th Grade Reading Level, CA vs U.S. *



Public 4th Grade Math Level, CA vs U.S. *



In Upcoming Editions of the Controller's Quarterly:

Economic
Forecast '97



1997-98 State
Budget Overview



Zero-Based
Budgeting



Regional
Economic Profiles



Annual Financial
Report on K-12
Schools



Education
Accountability



Kathleen Connell
California State Controller
P.O. Box 942850
Sacramento, CA 94250
(916) 445-2636

<http://www.sco.ca.gov>